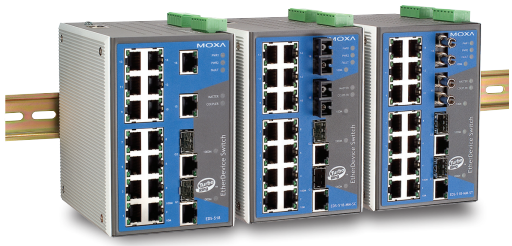
EDS-518A Series

16+2G-port Gigabit managed Ethernet switches



- 2 Gigabit plus 16 fast Ethernet ports for copper and fiber
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- ABC-01 (Automatic Backup Configurator) for system configuration backup (optional accessory)

Introduction

The EDS-518A is a standalone 18-port managed Ethernet switch that provides 2 combo Gigabit ports with built-in RJ45 or SFP slots for Gigabit fiber optic communication. The Ethernet redundant Turbo Ring and Turbo Chain (recovery time < 20 ms) increases the reliability and speed of your network backbone. The EDS-518A also supports advanced management and security features.

Features and Benefits

- IPv6 Ready logo awarded (IPv6 Logo Committee certified)
- IEEE 1588 PTP (Precision Time Protocol) for precise time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Modbus/TCP industrial Ethernet protocol supported
- Turbo Ring and Turbo Chain (recovery time < 20 ms at full load), and RSTP/STP (IEEE 802.1w/D)
- IGMP snooping and GMRP for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p) and TOS/DiffServ to increase determinism
- Port Trunking for optimum bandwidth utilization
- SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for efficient network monitoring and proactive capability
- Bandwidth management prevents unpredictable network status
- ABC-01 (Automatic Backup Configurator) for system configuration backup
- Port mirroring for online debugging
- Automatic warning by exception through e-mail, relay output

Specifications

Technology

Standards:
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X) and 100BaseFX
IEEE 802.3ab for 1000BaseT(X)
IEEE 802.3z for 1000BaseX
IEEE 802.3x for Flow Control
IEEE 802.1D for Spanning Tree Protocol
IEEE 802.1w for Rapid STP
IEEE 802.1Q for VLAN Tagging
IEEE 802.1p for Class of Service
IEEE 802.1X for Authentication
IEEE 802.3ad for Port Trunk with LACP
Protocols: IGMPv1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, Syslog, DHCP Option 66/67/82, SSH, SNMP Inform, Modbus/TCP, LLDP, IEEE 1588 PTP, IPv6
MIB: MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control: IEEE 802.3x flow control, back pressure flow control

Switch Properties

Priority Queues: 4
Max. Number of Available VLANs: 64
VLAN ID Range: VID 1 to 4094
IGMP Groups: 256
MAC Table Size: 8 K
Packet Buffer Size: 2 Mbit

Interface

Fiber Ports: 100BaseFX (SC/ST connector) and 1000BaseSFP slot
RJ45 Ports: 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
Console Port: RS-232 (RJ45 connector)
LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL
Alarm Contact: 2 relay outputs with current carrying capacity of 1 A @ 24 VDC
Digital Inputs: 2 inputs with the same ground, but electrically isolated from the electronics.
- +13 to +30V for state "1"
- -30 to +3V for state "0"
- Max. input current: 8 mA

Optical Fiber

	100BaseFX		
	Multi-mode	Single-mode	Single-mode, 80 km
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-10 dBm	0 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm	-34 dBm
Link Budget	12 dB	29 dB	29 dB
Typical Distance	5 km [a] 4 km [b]	40 km [c]	80 km [d]
Saturation	-6 dBm	-3 dBm	-3 dBm

a. 50/125 µm, 800 MHz*km fiber optic cable
b. 62.5/125 µm, 500 MHz*km fiber optic cable
c. 9/125 µm single-mode fiber optic cable
d. 9/125 µm single-mode fiber optic cable (80 km)

Power Requirements

Input Voltage: 24 VDC (12 to 45 VDC), redundant dual inputs
Input Current:
EDS-518A: 0.51 A @ 24 V
EDS-518A-MM/SS: 0.61 A @ 24 V
Overload Current Protection: Present
Connection: 2 removable 6-contact terminal blocks
Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal, IP30 protection
Dimensions: 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)
Weight: 1630 g
Installation: DIN-Rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:
Standard Models: 0 to 60°C (32 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location: UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI: FCC Part 15, CISPR (EN55022) class A
EMS:
EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3;
EN61000-4-4 (EFT), level 2; EN61000-4-5 (Surge), level 3;
EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-12
Maritime: DNV, GL
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Note: Please check Moxa's website for the most up-to-date certification status.

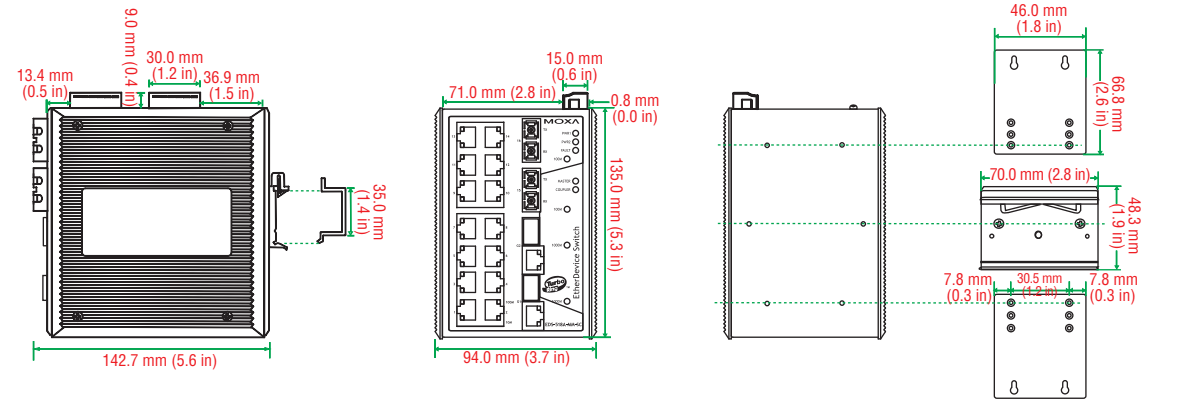
MTBF (meantime between failures)

Time: 240,000 hrs
Database: Telcordia (Bellcore), GB

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions



Side View | Front View | Rear View | DIN-Rail/Panel Mounting Kit

Ordering Information

Available Models		Port Interface					
		Gigabit Ethernet	Fast Ethernet				
				100BaseFX			
Standard Temperature (0 to 60°C)	Wide Temperature (-40 to 75°C)	Combo Port, 10/100/1000BaseT(X) or 1000BaseSFP*	10/100BaseT(X)	Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, SC Connector	Single-mode, SC Connector, 80 km
EDS-518A	EDS-518A-T	2	16	–	–	–	–
EDS-518A-MM-SC	EDS-518A-MM-SC-T	2	14	2	–	–	–
EDS-518A-MM-ST	EDS-518A-MM-ST-T	2	14	–	2	–	–
EDS-518A-SS-SC	EDS-518A-SS-SC-T	2	14	–	–	2	–
EDS-518A-SS-SC-80	-	2	14	–	–	–	2

*The EDS-518A series supports 2 1000BaseSFP slots. See page 1-69 for SFP-1G series Gigabit Ethernet SFP module product information.

Optional Accessories (can be purchased separately)

MXview: Moxa industrial network management software with 50, 100, 250, or 500 nodes
EDS-SNMP OPC Server Pro: OPC server software that works with all SNMP devices
ABC-01: Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°C operating temperature
DR-4524/75-24/120-24: 45/75/120 W DIN-Rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN-Rail 24 VDC power supplies, -20 to 70°C operating temperature
WK-46: Wall mounting kit
RK-4U: 4U-high 19" rack mounting kit

SFP-1G Series

1G-port Gigabit Ethernet SFP modules

- Compliant with IEEE 802.3z
- Differential LVPECL inputs and outputs
- TTL signal detect indicator
- Hot pluggable LC duplex connector
- Class 1 laser product, complies with EN60825-1

Specifications

Interface

Ethernet Ports: 1

Connectors: Duplex LC Connector or Simplex LC Connector (WDM-type only)

Note: WDM-type SFP modules must be used in pairs (e.g., SFP-1GXXALC and SFP-1GXXBLC)

Optical Fiber

	Gigabit Ethernet													
	SFP-SX	SFP-LSX	SFP-LX	SFP-LH	SFP-LHX	SFP-ZX	SFP-EZX	SFP-EZX-120	SFP-10A	SFP-10B	SFP-20A	SFP-20B	SFP-40A	SFP-40B
Wavelength	850 nm	1310 nm	1310 nm	1310 nm	1310 nm	1550 nm	1550 nm	1550 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
Max. TX	-4 dBm	-1 dBm	-3 dBm	-2 dBm	1 dBm	5 dBm	5 dBm	0 dBm	-3 dBm		-2 dBm		2 dBm	
Min. TX	-9.5 dBm	-9 dBm	-9.5 dBm	-8 dBm	-4 dBm	0 dBm	0 dBm	-5 dBm	-9 dBm		-8 dBm		-3 dBm	
RX Sensitivity	-18 dBm	-19 dBm	-20 dBm	-23 dBm	-24 dBm	-24 dBm	-30 dBm	-32 dBm	-21 dBm		-23 dBm		-23 dBm	
Link Budget	8.5 dB	10 dB	10.5 dB	15 dB	20 dB	24 dB	30 dB	27 dB	12 dB		15 dB		20 dB	
Typical Distance	550 m[a]	2 km[b]	10 km[c]	30 km[c]	40 km[c]	80 km[c]	110 km[c]	120 km[c]	10 km[c]		20 km[c]		40 km[c]	
Saturation	0 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-3 dBm	-8 dBm	-1 dBm		-1 dBm		-1 dBm	

a. 50/125 µm, 400 MHz * km or 62.5/125 µm, 500 MHz * km @ 850 nm multi-mode fiber optic cable
b. 62.5/125 µm, 750 MHz * km @ 1310 nm multi-mode fiber optic cable
c. 9/125 µm single-mode fiber optic cable

Note: The actual communication distance depends on many factors, including connector loss, cable deployment, and the age of the cabling system. We recommend doing a link budget analysis and reserving a 3 dB margin for such factors.

Environmental Limits

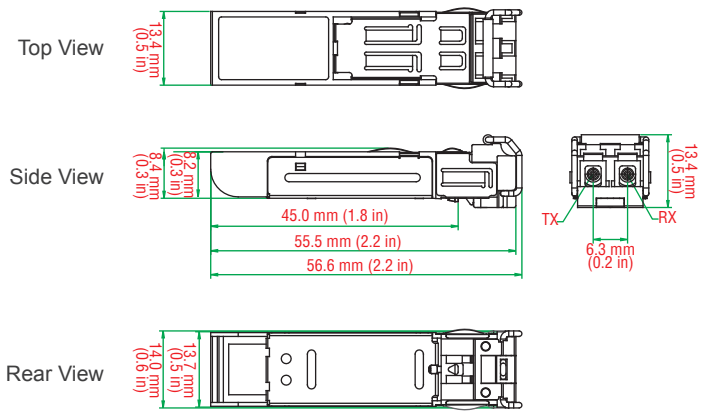
Operating Temperature:
Standard Models: 0 to 60°C (32 to 140°F)
Wide Operating Temp. Models: -40 to 85°C (-40 to 185°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety: UL, TÜV

Warranty

Warranty Period: 3 years
Details: See www.moxa.com/warranty



Ordering Information

SFP Modules

Available Models		Port Interface							
Standard Temperature (0 to 60°C)	Wide Temperature (-40 to 85°C)	1000BaseSX, LC Connector, 0.5 km	1000BaseLSX, LC Connector, 2 km	1000BaseLX, LC Connector, 10 km	1000BaseLH, LC Connector, 30 km	1000BaseLHX, LC Connector, 40 km	1000BaseZX, LC Connector, 80 km	1000BaseEZX, LC Connector, 110 km	1000BaseEZX, LC Connector, 120 km
SFP-1GSXLC	SFP-1GSXLC-T*	1	–	–	–	–	–	–	–
SFP-1GLSXLC	SFP-1GLSXLC-T	–	1	–	–	–	–	–	–
SFP-1GLXLC	SFP-1GLXLC-T	–	–	1	–	–	–	–	–
SFP-1GLHLC	SFP-1GLHLC-T	–	–	–	1	–	–	–	–
SFP-1GLHXLC	SFP-1GLHXLC-T	–	–	–	–	1	–	–	–
SFP-1GZXLC	SFP-1GZXLC-T	–	–	–	–	–	1	–	–
SFP-1GEZXLC	–	–	–	–	–	–	–	1	–
SFP-1GEZXLC-120	–	–	–	–	–	–	–	–	1

* SFP-1GSXLC-T: -20 to 75°C operating temperature

WDM-type (BiDi) SFP Modules

Availabe Models		Port Interface					
Standard Temperature (0 to 60°C)	Wide Temperature (-40 to 85°C)	1000BaseSFP, LC Connector, 10 km		1000BaseSFP, LC Connector, 20 km		1000BaseSFP, LC Connector, 40 km	
		TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
SFP-1G10ALC	SFP-1G10ALC-T	1	–	–	–	–	–
SFP-1G10BLC	SFP-1G10BLC-T	–	1	–	–	–	–
SFP-1G20ALC	SFP-1G20ALC-T	–	–	1	–	–	–
SFP-1G20BLC	SFP-1G20BLC-T	–	–	–	1	–	–
SFP-1G40ALC	SFP-1G40ALC-T	–	–	–	–	1	–

The SFP-1G series modules can be used with the following products

EDS-728/828 series: IM-2GSFP series Gigabit Ethernet interface modules
EDS-611/619 series: 8+3G/16+3G-port compact modular managed Ethernet switches
EDS-G509 series: 9G-port full Gigabit managed Ethernet switches
EDS-518A series: 16+2G-port Gigabit managed Ethernet switches
EDS-510A series: 7+3G-port Gigabit managed Ethernet switches
EDS-P510 series: 7+3G-port Gigabit PoE managed Ethernet switches
IKS-6526-2GTXSFP series: 24+2G-port rackmount managed Ethernet switches
PT and IKS series: PM-7200-2G/4G series Gigabit Ethernet interface modules
EDS-G308 series: 8G-port full Gigabit unmanaged Ethernet switches
EDR-G903 series: Industrial Gigabit Firewall/VPN secure router
IMC-101G series: Industrial Gigabit media converters

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